

REMARKS

Claims 1-7 and 23-37 are pending. By this Amendment, claims 1-7, 25, 29-32, 35, and 36 are cancelled, claim 23 is amended and new claims 38-46 are added. No new matter has been added and support for the claims can be found throughout the specification and figures as originally filed.

**Claim Language – “Adapted to”**

Within the Office Action mailed March 19, 2007, the use of the term “adapted to” is addressed and it is asserted that “the recitation that *an element is ‘adapted to’ perform or is ‘capable of being’* performing a function is not a positive limitation but only requires the ability to so perform,” citing *In re Venezia*, 189 USPQ 149 (CCPA 1976). Contrary to this assertion, Applicants herein direct the attention of the Examiner to MPEP § 2111.04, wherein it is stated that, “[E]xamples of claim language...that may raise a question as to the limiting effect of the language in a claim [include]: (1) ‘adapted to’ ... clauses.” MPEP § 2111.04. “The determination of whether each of these clauses is a limitation in a claim depends on the specific facts of the case.” *Id.*

Furthermore, Applicant’s respectfully assert that upon reading *In re Venezia*, none of the cited language from the Office Action is to be found within the case. In fact, the ruling of *In re Venezia* is in complete disagreement with the position expressed in the Office Action. Specifically, the court held that the “adapted to” language of the claims “[r]ather than being a mere direction of activities to take place in the future, this language imparts a structural limitation to the sleeve...We see nothing wrong in defining the structures of the components of the completed connector assembly in terms of the interrelationship of the components, or the

attributes they must possess, in the completed assembly. More particularly, we find nothing indefinite in these claims.” 189 USPQ 149, 151-52 (CCPA 1976). “[A]lthough the claims before us contain some language which can be labeled ‘conditional,’ this language, rather than describing activities which may or may not occur, serves to precisely define present structural attributes of interrelated component parts of the ‘kit,’ such that a later assembly of the ‘kit’ of parts may be effected.” *Id.* at 152. Clearly, the court took the position that “adapted to” language can function as a positive limitation in a claim, which may distinguish the claim over prior art.

### **Claim Rejections – 35 U.S.C. § 103**

Claims 1-2, 4-7, 23-24, 26-27, and 35-37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,531,044 to Chang in view of U.S. Patent No. 6,197,435 to Tsujimura et al., and further in view of U.S. Patent no. 5,650,662 to Edwards et al. With the present amendment, Applicants have amended claim 23 to further clarify the presently claimed invention. Specifically, independent claim 23 has been amended to recite, in pertinent part, “a substantially planar base plate...having a proof stress of not higher than 95 MPa and not lower than 40 MPa....”

None of the cited references, alone or in combination, disclose this limitation in combination with the other elements of amended claim 23. As pointed out by the Examiner on page 3 of the Office Action, Chang fails to disclose an aluminum alloy base plate having a proof stress not higher than 95 MPa. In fact, Chang does not disclose a proof stress at all, and particularly does not disclose a base plate having a proof stress of “not higher than 95 MPa and not lower than 40 MPa.”

In reviewing the disclosures of Tsujinura et al. and Edwards et al. it is clear that neither reference when combined with Chang makes up for the deficiencies of Chang. In particular, Tsujinura et al. discloses a substrate of high reliability and excellent in thermal cycle resistance provided by bonding a ceramic substrate with a laminated product of metals of specific materials. However, the first metal, referred to by the Examiner as the aluminum alloy base plate on page 3 of the Office Action, has a proof stress of 11.7 MPa. *See* Tsujinura et al. at Col. 9, lines 58-59. In addition, Edwards et al., while teaching a technique of direct bonding, fails to disclose the use of a base plate having a proof stress of “not higher than 95 MPa and not lower than 40 MPa.”

As Chang, Tsujinura et al. and Edwards et al., considered individually and in combination, fail to teach or suggest all of the limitation of amended independent claim 23, a *prima facie* case of obviousness has not been established. MPEP § 2143.03. Furthermore, the subject matter of amended independent claims 23 is more than a predictable use of prior art elements according to their established functions, and no common sense rationale exists that “would have prompted a person of ordinary skill in the art to combine the elements as the new invention does.” *KSR Int’l Co. v. Teleflex, Inc.*, 127 U.S. 1727, 1731 (2007). For at least these reason, independent claim 23 is in condition for allowance. By definition, dependent claims 24, 26-27, and 36-37, which depend from independent claim 23 are also in condition for allowance.

Claims 3 and 25 stand rejected under § 103(a) as being unpatentable over Chang, Tsujimura et al. and Edwards et al., and further in view of U.S. Patent No. 6,033,787 to Nagase et al. Claim 3 has been cancelled, and the subject matter of claim 25 has been incorporated into independent claim 23. While teaching the use of various materials, Nagase et al. fails to cure the

aforementioned deficiencies of Chang, Tsujimura et al. and Edwards et al. with respect to amended independent claim 23. Nagase et al. fails to disclose a base plate having a proof stress of “not higher than 95 MPa and not lower than 40 MPa”. Therefore, claim 23, as well as dependent claim 25, is allowable for at least these reasons.

Claim 28 stands rejected under § 103(a) as being unpatentable over Chang in view of Tsujimura et al. and Edwards et al., and further in view of Prior Art in the form of Figure 5. Figure 5 does not illustrate, teach or suggest a base plate having a proof stress of “not higher than 95 MPa and not lower than 40 MPa” and rather illustrates a conventional power module which the invention teaches away from. Therefore, Figure 5 fails to make up for the deficiencies discussed above of Chang, Tsujimura et al., and Edwards et al. with respect to claim 23. Claim 28 depends from claim 23 and is allowable for at least the reasons claim 23 is allowable.

Claims 29-34 stand rejected under § 103(a) as being unpatentable over Chang, Tsujimura et al., and Edwards et al., and further in view of U.S. Patent No. 6,373,717 to Downes, Jr. et al. Downes, Jr. et al. discloses an electronic package but lacks any disclosure, teaching or suggestion of a base plate having a proof stress of “not higher than 95 MPa and not lower than 40 MPa.” For at least this reason, Downes, Jr. et al. fails to make up for the deficiencies identified previously with the combination of Chang, Tsujimura et al., and Edwards et al. with respect to claim 23. Claims 29-32 have been cancelled, and claims 33 and 34, which depend from claim 23 are by definition allowable for at least the reasons claim 23 is allowable.

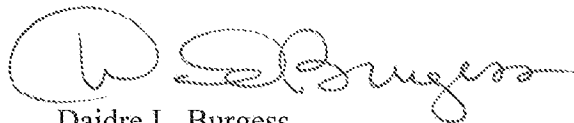
**New Claims 38-46**

New claims 38-46 directed to a power module (claims 38 and 46) and a metal-ceramic circuit board have been added (claim 39). Each of independent claims 38, 39 and 46 include a limitation necessitating a substantially planar base plate having a proof stress of not higher than 95 MPa and not lower than 40 MPa. As discussed with respect to the present rejections, none of the previously cited references disclose, teach or suggest such a base plate. For at least this reason, Applicants respectfully assert that claims 38-46 are in condition for allowance.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read 'D. L. Burgess', enclosed within a large, loopy circular flourish.

Daidre L. Burgess  
Registration No. 60,389

Customer No. 24113  
Patterson, Thunte, Skaar & Christensen, P.A.  
4800 IDS Center  
80 South 8th Street  
Minneapolis, Minnesota 55402-2100  
Telephone: (612) 252-1558